

BLUM et al., Ser. No. 10,089,173

IN THE CLAIMS

Amend the claims as shown on the attached sheets.

CLAIMS IN THE CASE

1. (currently amended) A solid composition comprising
  - (A) at least one solid (meth)acrylate copolymer with a number-average molecular weight of from 850 to 10 000 and a molecular weight polydispersity Mw/Mn of from 1.0 to 5.0, containing at least one group (a) having at least one bond which can be activated with actinic radiation;and
  - (B) at least one solid compound comprising a parent structure and, attached thereto, on average per molecule more than one group (a) having at least one bond which can be activated with actinic radiation wherein  
(meth)acrylate copolymer (A) and/or the compound (B) comprise at least one chemically bonded stabilizer (e) and the parent structure is oligomeric and/or polymeric and is derived from random, alternating and/or block, linear, branched, hyperbranched, dendrimeric and/or comb polyaddition resins, polycondensation resins and/or addition (co)polymers of ethylenically unsaturated monomers.
2. (original) The solid composition as claimed in claim 1, characterized in that the (meth)acrylate copolymer
  - (A) is preparable by
    - (1) radical high-temperature polymerization of
      - (m1) at least one methacrylate and
      - (m2) at least one monomer copolymerizable therewith, with
      - (m3) from 5.0 to 50 mol% of the total amount of monomers (m1) and (m2)

being monomers which carry nonpolymerizable reactive functional groups (b); and

- (2) polymer-analogous reaction of the resulting methacrylate copolymer, which carries at least one reactive functional group (b), with
  - (m4) at least one compound containing at least one bond which can be activated with actinic radiation and at least one reactive functional group (c) which is complementary to the group (b), to give the group (a).
3. (currently amended) The solid composition as claimed in claim 1, characterized in that the bonds which can be activated with actinic radiation comprise carbon-hydrogen single bonds or carbon-carbon, carbon-oxygen, carbon-nitrogen, carbon-phosphorus or carbon-silicon single bonds or double bonds, ~~especially carbon-carbon double bonds.~~
4. (previously presented) The solid composition as claimed in claim 1, characterized in that the groups (a) are selected from the group containing (meth)acrylate, ethacrylate, crotonate, cinnamate, vinyl ether, vinyl ester, dicyclopentadienyl, norbornenyl, isoprenyl, isopropenyl, allyl and butenyl groups; dicyclopentadienyl ether, norbornenyl ether, isoprenyl ether, isopropenyl ether, allyl ether or butenyl ether groups, and dicyclopentadienyl ester, norbornenyl ester, isoprenyl ester, isopropenyl ester, allyl ester and butenyl ester groups.
5. (currently amended) The solid composition as claimed in claim 4, characterized in that the groups (a) are (meth)acrylate groups, ~~especially acrylate groups.~~
6. (previously presented) The solid composition as claimed in claim 1,

characterized in that, based on its overall weight, it contains from 5.0 to 95% by weight of the (meth)acrylate copolymer (A) and from 95 to 5.0% by weight of the compound (B).

7. (previously presented) The solid composition as claimed in claim 1, characterized in that the groups (a) in the compound (B) are attached to the parent structure by way of urethane, ester, ether and/or amide groups.
8. (original) The solid composition as claimed in claim 7, characterized in that the groups (a) in the compound (B) are attached to the parent structure by way of urethane groups.
9. (previously presented) The solid composition as claimed in claim 1, characterized in that the compound (B) is amorphous, partly crystalline, or crystalline.
10. (previously presented) The solid composition as claimed in claim 1, characterized in that the compound (B) has a melting range or melting point in the temperature range from 50 to 130°C.
11. (previously presented) The solid composition as claimed in claim 1, characterized in that the compound (B) has a melt viscosity at 130°C of from 50 to 20 000 mPas.

Claim 12 (canceled)

13. (currently amended) The solid composition as claimed in claim 1~~12~~, characterized in that the oligomeric and/or polymeric parent structure of the compound (B) contains olefinically unsaturated double bonds.

Claim 14 (canceled)

15. (currently amended) The solid composition as claimed in claim 11 -14, characterized in that the addition (co)polymers are poly(meth)acrylates and/or partially hydrolyzed polyvinyl esters and the polyaddition resins and/or polycondensation resins are polyesters, alkyds, polyurethanes, polyester--polyurethanes, polylactones, polycarbonates, polyethers, polyether--polyesters, epoxy resinamine adducts, polyureas, polyamides or polyimides, especially polyesters, polyester-polyethers, polyurethanes, and polyester-polyurethanes.

Claim 16 (canceled)

17. (currently amended) The solid composition as claimed in claim 1 16, characterized in that a HALS compound is used as chemically bonded stabilizer (e).
18. (original) The solid composition as claimed in claim 17, characterized in that the 2,2,6,6-tetramethyl-piperidine--N--oxide--4-oxy groups is used as chemically bonded HALS compound (e).
19. (currently amended) The solid composition as claimed in claim 1 16, characterized in that the chemically bonded stabilizer (e) is present in the solid compound (B).
20. (previously presented) The solid composition as claimed in claim 1, characterized in that the compound (B) contains reactive functional groups (c) which are able to undergo thermal crosslinking reactions with groups (c) of its own kind and/or with complementary functional groups (b) which are also

present in the methacrylate copolymer (A) and/or in at least one crosslinking agent.

21. (previously presented) The solid composition as claimed in claim 1, characterized in that the methacrylate copolymer (A) and/or the compound (B) comprises chemically bonded photoinitiators and/or photocoinitiators.

Claim 22 (canceled)

23. (previously presented) Coating materials, adhesives or sealing compound comprising at least solid compositions as claimed in claim 1.
24. (original) The coating materials, adhesives or sealing compounds as claimed in claim 23, characterized in that at least one further constituent curable with actinic radiation is present therein.
25. (original) The coating materials, adhesives or sealing compounds as claimed in claim 24, characterized in that the further constituent is selected from the group containing other (meth)acrylate-functional (meth)acrylic copolymers, polyether acrylates, polyester acrylates, unsaturated polyesters, epoxy acrylates, amino acrylates, melamine acrylates, silicone acrylates, and the corresponding methacrylates.
26. (original) The coating materials, adhesives or sealing compounds as claimed in claim 25, characterized in that the unsaturated polyester is selected from the group containing amorphous, partly crystalline and crystalline solid polyesters containing at least one terminal group which derives from the adduct of dicyclopentadiene and maleic anhydride in a molar ratio of 1:1, and/or at least

one endomethylenetetrahydrophthalic acid group.

27. (previously presented) The coating materials, adhesives or sealing compounds as claimed in claim 23, characterized in that at least one further additive is present therein.

28. (previously presented) The coating materials, adhesives or sealing compounds as claimed in claim 23, characterized in that they are present as powders, powder slurries, or a solution or dispersion in organic solvents.

Claim 29 (canceled)

30. (previously presented) A process for producing coatings, adhesive films or seals for primed or unprimed substrates, wherein

(1) at least one coating material and/or adhesive and/or at least one sealing compound as claimed in claim 23 in the form

of

(1.1) a melt,

(1.2) a powder,

(1.3) a powder slurry or

(1.4) a dispersion or a solution in at least one organic solvent is applied to the primed or unprimed substrate,

(2) the resulting powder slurry film (1.3) or the resulting film of a dispersion or a solution (1.4) is dried or the resulting film of the melt (1.1) is caused to solidify or is maintained in the melted state by heating,

(3) the resulting solid film (1.2), (1.3) or (.4) is melted by heating, and

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(4) the melted film which results in process step (2) or (3),

(4.1) in the melted state,

(4.2) on solidification and/or

(4.3) after solidification,

is cured with actinic radiation.

31. (original) The process as claimed in claim 30, characterized in that the film is thermally cured by heating before, during or after process step (4).

32. (previously presented) The process as claimed in claim 30, characterized in that the heating is carried out with near infrared (NIR) light.

33. (previously presented) Coatings, adhesive films or seals on primed or unprimed substrates, by the process as claimed in claim 30.

34. (currently amended) Primed and unprimed substrates, ~~especially bodies of automobiles and commercial vehicles, industrial components, including plastics parts, packaging, coils and electrical components, or furniture,~~ comprising at least one coating, at least one adhesive film and/or at least one seal as claimed in claim 33.

35. (new) The composition of claim 3, wherein the bonds are carbon-carbon double bonds.

36. (new) The compositions of claim 5, wherein the groups (a) are acrylate groups.

37. (new) The primed and unprimed substrates of claim 34, which are bodies of automobiles and commercial vehicles, industrial components, including plastics parts, packaging, coils and electrical components, or furniture.



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